

Summary of RTCH12, 13 and 15 Conditioning

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Status

- RTCH12 was fully conditioned (as of 8/22/11) to operate with a forward power of 32 kW, a pulse width of 3 ms and a rep rate of 2 Hz.
- RTCH13: 8/24/2011, 31.4 kW, 3 ms, 2 Hz
- RTCH15: 8/30/2011, 26 kW, 3ms, 2Hz.

For some reason, the forward power (26 kW) was less than it had been previously (~31 kW), even though the attenuator and modulator power supply reference voltage were set to the same values that they had been set to previously. The cavity (drive) frequency was the same to within a few kHz, so the power difference cannot be explained by the dependence of klystron output on frequency. Klystron body water temperature is a possibility, but this was not datalogged, so a comparison wasn't feasible.

Baking

- The cavities were not baked.

Vacuum

Initial (before RF was applied) and final pressure in cavities, with ion pump and turbo pump, are listed below.

Note that the amount of time the cavities were pumped on before applying RF varied.

Note also that values are approximate and pressure fluctuates throughout the day even in the absence of RF (see Figure 4).

Format: initial / final with RF / final without RF (torr)

- CH12 – 4.0e-7/1.0e-6/2.7e-7*
- CH13 – 1.1e-6/2.7e-6/4.5e-7
- CH15 – 1.0e-6/9.0e-7/1.0e-7

* This was the pressure immediately after turning off the RF. The cavity was not pumped on any further, since the next cavity was waiting to be moved to the test stand.

Details

- In the interest of time, we did not wait as long (as we had in the past) for the cavities to pump down.
- See <http://dbweb4.fnal.gov:8080/ECL/hins/E/index>

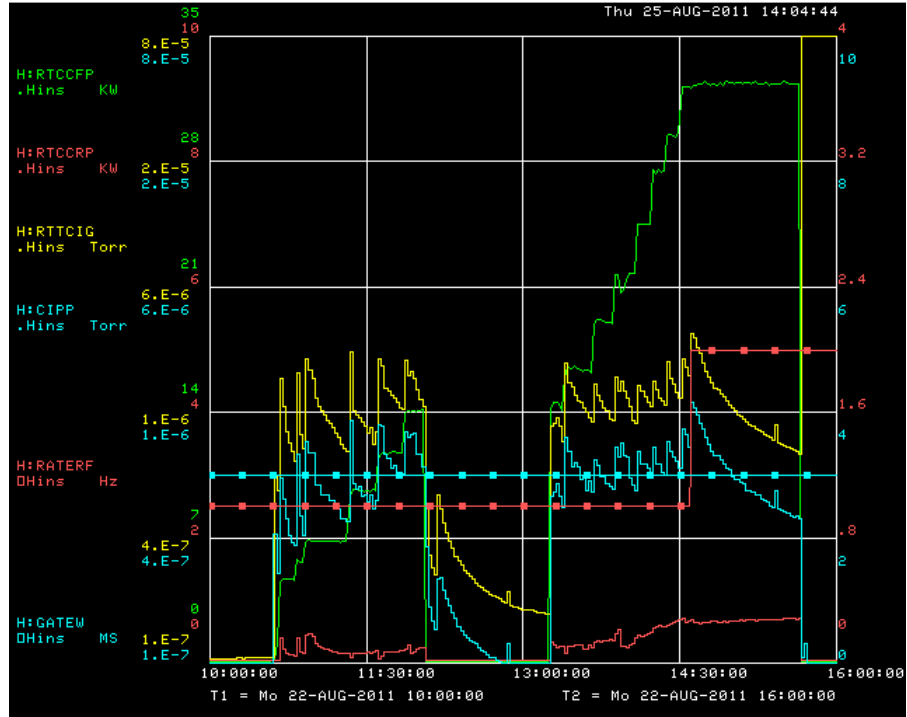


Figure 1: Forward/reverse power (green /red) and pressure (yellow – ion gauge, blue –ion pump) during the final hours of conditioning of CH12. The red and blue lines with square markers show repetition rate and pulse width.

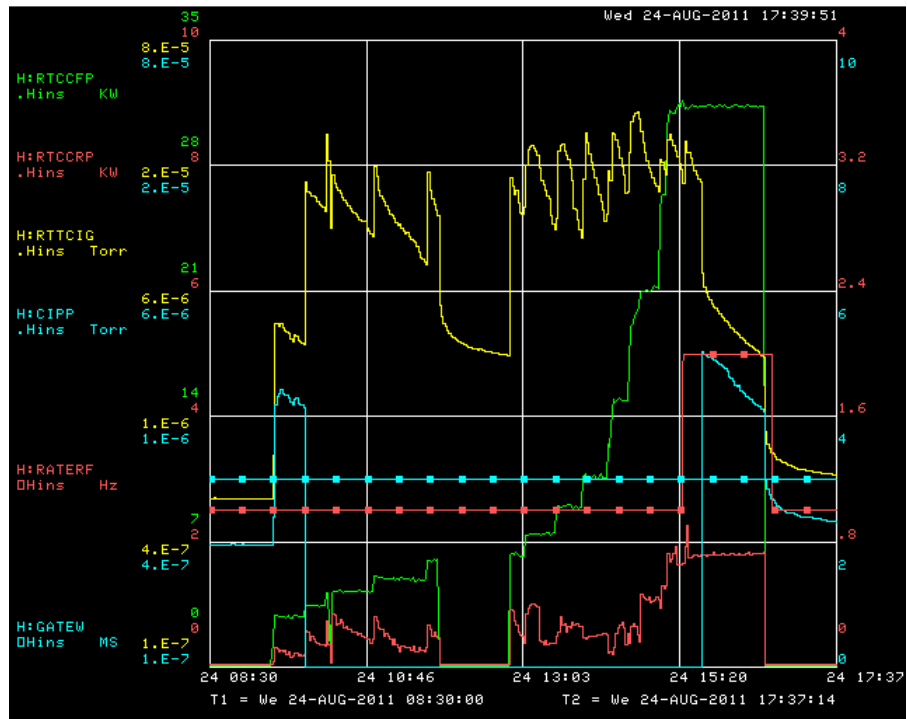


Figure 2: Forward/reverse power (green /red) and pressure (yellow – ion gauge, blue –ion pump) during the final hours of conditioning of CH13. The red and blue lines with square markers show repetition rate and pulse width.

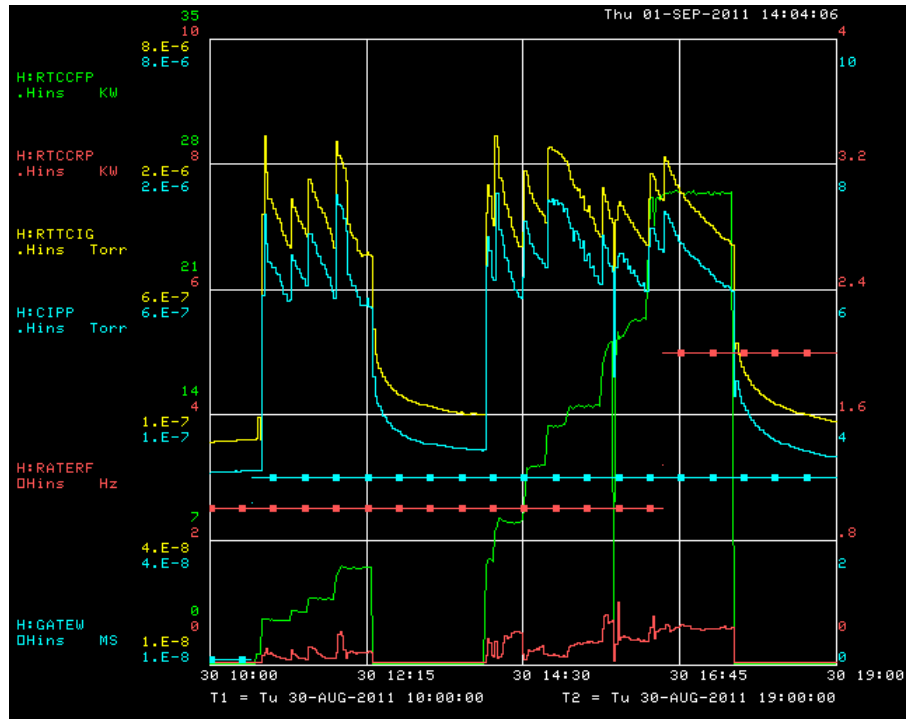


Figure 3: Forward/reverse power (green /red) and pressure (yellow – ion gauge, blue –ion pump) during the final hours of conditioning of CH15. The red and blue lines with square markers show repetition rate and pulse width.

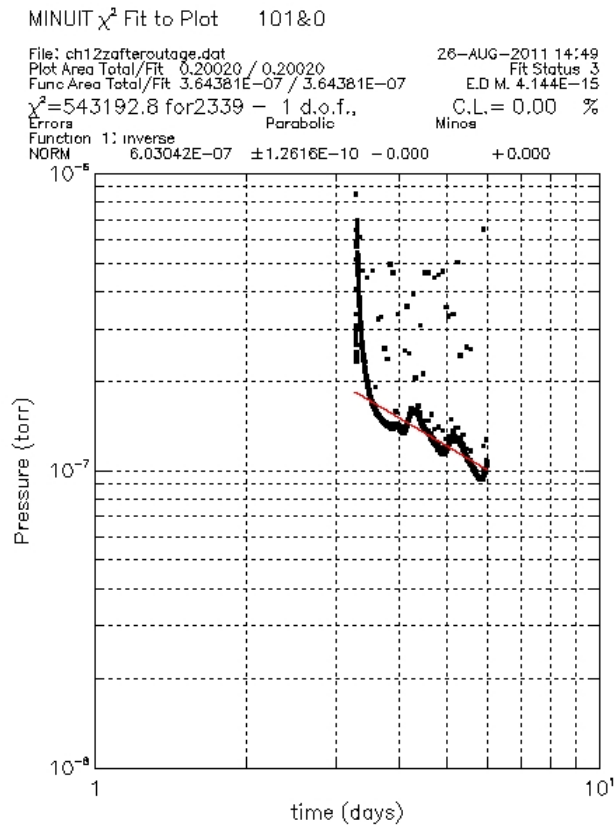


Figure 4: Pressure fluctuations in CH12 with no RF applied. The plot starts after a power outage on Friday 8/19/11.